In the Claims:

1. (Original) Arrangement for the torque measurement of rotating machine parts with a strain measuring bridge (2) arranged on the rotor, the output signals of which strain measuring bridge are amplified and converted in a voltage-frequency converter (4) into a frequency-proportional signal and are transmitted by means of a transmitter circuit (9) to a stator, characterized in that the voltage-frequency converter (4) is embodied as a synchronous voltage-frequency converter, after which a follow-up synchronization circuit (PLL) (6) is circuit-connected for the suppression of the so-called frequency jitter.

2. (Original) Arrangement for the torque measurement according to claim 1, characterized in that the synchronous voltage-frequency converter (4) is driven with a high quartz-controlled frequency, which comprises a multiple of the required carrier frequency, which is provided for a prescribed signal bandwidth, whereby the follow-up synchronization circuit (PLL) (6) is followed by a frequency divider circuit (10), which divides down the output frequency by the multiple.

3. (Original) Arrangement for the torque measurement according to claim 2, characterized in that the synchronous voltage-frequency converter (4) is arranged on the rotor

side (14), while the follow-up synchronization circuit (PLL) (6) is provided on the stator side (13), whereby the quartz frequency is produced on the stator side (13) and is inductively transmitted in a synchronized manner to the rotor side (14) with the aid of the transmitter circuit (12) and is supplied to the synchronous voltage-frequency converter (4).

4. (New) An apparatus for measuring torque, comprising:

a stator;

a rotor arranged and adapted to rotate relative to said stator;

an analog strain measuring bridge arranged on said rotor and adapted to produce an analog measurement voltage signal at a bridge output thereof;

a synchronous voltage-frequency converter arranged on said rotor, and having a voltage signal input connected to said bridge output, and having a converter signal output adapted to provide a frequency signal; and

a series circuit arrangement including a phase-locked loop and an inductive contactless transmitter arrangement connected in series with one another between said converter signal output and a stator-side output of said apparatus, wherein said stator-side output is arranged on said stator, and said inductive contactless transmitter arrangement includes at least one first inductive element arranged on said rotor and at least one second inductive element

arranged on said stator so as to cooperate inductively with said at least one first inductive element.

5. (New) The apparatus according to claim 4, wherein said phase-locked loop is arranged on said rotor and connected between said converter signal output and said inductive contactless transmitter arrangement in said series circuit arrangement.

6. (New) The apparatus according to claim 4, wherein said phase-locked loop is arranged on said stator, and said inductive contactless transmitter arrangement is connected between said converter signal output and said phase-locked loop in said series circuit arrangement.

7. (New) The apparatus according to claim 4, further comprising a quartz-controlled frequency generator having an output connected to a reference input of said synchronous voltage-frequency converter.

8. (New) The apparatus according to claim 7, wherein said quartz-controlled frequency generator is arranged on said stator, and said output of said quartz-controlled frequency generator is connected to said reference input of said synchronous voltage-frequency converter through said inductive contactless transmitter arrangement.

9. (New) The apparatus according to claim 4, wherein said synchronous voltage-frequency converter is a high frequency converter adapted to produce said frequency signal at said converter signal output in a MHz high frequency range that is a multiple of a required output frequency range at said stator-side output of said apparatus, and further comprising a frequency divider interposed between said converter signal output and said stator-side output of said apparatus.

[RESPONSE CONTINUES ON NEXT PAGE]